WHAT IS CLAIMED IS:

1. A method for transmitting a stream of digital data values, comprising:

modulating a carrier wave to carry symbols representative of successive digital data values, symbols representative of successive ones of the digital data values interfering more in the modulated carrier wave than in a reference wave transmitting the same symbol rate as the modulated carrier wave, the modulated carrier wave having a narrower spectral width than the reference wave, the reference wave being produced by modulating the same carrier wave with one of the digital data values at a time and having an effective symbol rate more than twice as great as the modulated carrier wave.

2. The method of claim 1, wherein the modulating a carrier wave includes amplitude modulating the carrier wave with a non-return-to-zero waveform whose amplitude is sequentially defined from successive values of the symbols.

3. The method of claim 1, wherein the modulating a carrier wave includes amplitude modulating an optical carrier.

4. The method of claim 3, wherein the modulating includes amplitude modulating the carrier wave with a non-return-to-zero waveform whose amplitude is sequentially defined from successive values of the symbols.

5. The method of claim 1, wherein the digital data values are data bits.

6. A method of transmitting a stream of digital data values, comprising:

generating a stream of symbols by processing the digital data values with a partial response function defined by $[1+\sum^{K}_{i=1}Z^{-i}]$, the integer K being greater than one, and the functions Z^{-i} delaying the digital data values by i times the period between successive ones of the digital data values; and

modulating a carrier wave with the generated stream of symbols.

7. The method of claim 6, wherein the modulating includes amplitude

modulating the carrier wave with a non-return-to-zero waveform whose amplitude is sequentially defined by a sequence of the symbols.

8. The method of claim 6, wherein the modulating includes amplitude modulating an optical carrier.

9. The method of claim 8, wherein the modulating includes amplitude modulating the carrier wave with a non-return-to-zero waveform whose amplitude is sequentially defined by a sequence of the symbols.

10. The method of claim 6, wherein the integer K is odd.

11. The method of claim 6, wherein the digital data values are data bits.

12. A transmitter of digital data, comprising:

a modulator having an input for a carrier signal and an input for a first stream of symbols representative of digital data values, the modulator to modulate the carrier signal with sequential values of symbols of a second stream, each symbol of the second stream being a sum of the present symbol and the last K symbols of the first stream, the integer K being greater than one.

13. The transmitter of claim 12, wherein the modulator processes the symbols of the first stream with a partial response function defined by $[1+\sum^{K}_{i=1}Z^{-i}]$, and the functions Z^{-i} delaying symbols by i times the period between successive ones of the input symbols.

14. The transmitter of claim 12, wherein the modulator modulates the carrier signal with a non-return-to-zero waveform whose amplitude is sequentially defined by the sequence of symbols in the second stream.

15. The transmitter of claim 12, wherein the modulator is configured to modulate an optical carrier.

16. The transmitter of claim 15, wherein the modulator modulates the optical beam with a non-return-to-zero waveform whose amplitude is sequentially defined by the sequence of symbols in the second stream.

17. The transmitter of claim 12, wherein the integer K is odd.

18. The transmitter of claim 12, wherein the digital data values are data bits.

19. A receiver, comprising:

a detector to receive a modulated carrier signal from a transmitter; and

a mapper configured to use the received signal to determine values of input digital data values associated with a stream of input symbols that the transmitter used to modulate the carrier signal, the carrier signal being modulated by a stream of control symbols formed by processing the stream of input digital data values with a partial response function defined by $[1+\sum^{K}_{i=1}Z^{-i}]$, the integer K being greater than one, and the functions Z^{-i} delaying the input digital data values by i multiplied by the time between successive ones of the input digital data values.

20. The receiver of claim 19, wherein the detector determines optical intensities.

21. The receiver of claim 19, wherein the mapper includes an inverse constellation mapper based on a constellation of transmission symbols in which at least two of the transmission symbols correspond to the same value for ones of the input data values.

22. The receiver of claim 19, wherein the input digital data values are data bits.

23. A receiver, comprising:

an amplitude detector to receive a carrier wave and to determine a sequence of values representative of amplitudes of the received carrier wave; and

an inverse constellation mapper to estimate a sequence of input digital data values based both on the sequence of determined values and on a relation between amplitudes of a symbol constellation and values of the input digital data values used to modulate the carrier wave, the relation associating at least two amplitudes of the constellation to the same value of an input digital data value.

24. The receiver of claim 23, further comprising:

an optical filter to select a frequency band, the detector coupled to receive the carrier wave belonging to the selected frequency band from an output of the optical filter.

25. The receiver of claim 24, wherein the detector detects one of visible and near infrared light.

26. The receiver of claim 23, further comprising:

a slicer to receive the determined sequence of values from the detector and to send new values of amplitudes representative of symbols of the constellation to the mapper based on the received values.

27. The receiver of claim 26, wherein the detector is configured to detect a carrier wave in a wireless channel.

28. The receiver of claim 23, wherein the input digital data values are data bits.

29. The receiver of claim 23, wherein the values representative of amplitudes are measured intensity values of the received carrier wave.